

# **CIWQS Review Panel: Observations and Recommendations**

**Presentation to the State Water Resources  
Control Board**

**June 5, 2007**

# Overview

- **A permit management information system is mission critical for the State Water Board**
  - ◆ SWIM is antiquated and we agree with the need to replace it
- **CIWQS' underlying structure appears valid, but we need additional information to be certain**
  - ◆ A subcommittee will conduct further evaluation during the next two months
- **Program implementation was seriously flawed**
  - ◆ We agree with the legislative analyst that permit management is less functional now than before CIWQS was implemented
- **We have suggested substantial changes to the program and scheduled another review in 6 months**

# Basis for Moving Forward

- **There was a valid need to replace SWIM**
  - ◆ The code was antiquated; not easily maintained or updated
  - ◆ The system did not support electronic reporting
  - ◆ It did not mesh well with web access tools
  - ◆ It did not allow for integration with the other State Board data bases
- **A centralized permit management database requires user buy-in and support**
- **CIWQS must integrate with other databases and functions, not necessarily replace them**

# Database Structure

- **The underlying data base design appears valid**
  - ◆ But, the system is complex and is not yet fully functional
  - ◆ Some testimony requires us to gather additional information
  - ◆ We need more time to address these concerns
- **A Panel subcommittee will make this determination**
  - ◆ Solicit input from EPA's contractor and State Board staff
  - ◆ Examine database structure in detail
  - ◆ Report on robustness of underlying database structure (w/in 2 months)

# Flawed Implementation

- **Scope too broad**
  - ◆ Tried to integrate too many systems
  - ◆ Tried to accomplish it all at once, rather than in sequence
- **Inadequate user input**
  - ◆ Feedback mechanisms not well developed
- **Old system turned off before new system was ready**
  - ◆ Data input systems not vetted
  - ◆ Output reports not yet functional
  - ◆ Forcing legacy data into the system led to data quality problems
- **As a result, there is diminished confidence in the system and damaged client relationships**

# Summary of Recommendations

- **Reduce the scope**
- **Restructure management**
- **Validate system requirements**
- **Rebuild constituency**
- **Address data issues**
- **Produce key reports**
- **Improve user interface**

# Reduce the Scope

- **Focus on permits and compliance**
- **Retain SWAMP and GeoTracker in present (separate) form for now**
- **Define major external interfaces:**
  - ◆ Define interoperability interface with PCS/ICIS
  - ◆ Define interoperability concepts with SWAMP, GeoTracker, and CEDEN
- **Resources may be inadequate**
  - ◆ Efforts over the next 6 months will help resolve this

# Restructure Management

- **Ensure that CIWQS users' needs are central to the management structure**
- **Move the project budget to Division of Water Quality**
  - ◆ Project control should reside with those with knowledge of and responsibility for the management mission
- **Establish a dedicated Project Lead**
  - ◆ Shared decision making appears ineffective
  - ◆ OIT staff working on CIWQS should report to and be accountable to Division of Water Quality

# Validate System Requirements

- **Establish and implement a system engineering process**
  - ◆ Use software design best practices to improve design, implementation, testing, and management
  
- **Examine the data model**
  - ◆ Panel subcommittee will:
    - examine database structure in detail
    - address EPA's concerns
    - consider OIT's response
  - ◆ Conduct a pilot test (cradle-to-grave)
    - select a representative sample of the hardest permits from multiple regions
    - document deficiencies and develop plan to address these
    - demonstrate to your clients (and yourselves) that the system is fully functional

# Rebuild Constituency

- **Create a Steering Committee from the user community**
  - ◆ To include the Regions, EPA, dischargers, and a representative of the public at a minimum
  - ◆ To include sceptics as well as supporters
  - ◆ Steering Committee should report to Deputy EO
  
- **Steering Committee should sign off on:**
  - ◆ System requirements
  - ◆ Design and implementation priorities
  
- **Implement an outreach plan**

# Address Data Issues

- **Correct the legacy data**
- **Correct the business rules**
- **Correct calculated violations**
- **Include QA/QC as part of data entry**
- **Develop standardized data entry procedures**

# Produce Key Reports

- **Output reports should be prioritized with key users**
- **There is also a need for internal process reports**
  - ◆ Data entry metrics
  - ◆ System metrics
  - ◆ Quality control

## **Users, including the public, need improved access**

- ◆ Summary reports
- ◆ Straightforward queries

# Improve User Interfaces

- **No one seems happy with the user interface**
  - ◆ Partly due to overly broad scope
- **Simplify data entry forms**
- **Redesign linking**
- **Implement usability testing**
- **Develop contextual help and pull-down lists**

# GeoWBS

- **Need GeoWBS replacement**
  - ◆ Old system became non-functional when imported into CIWQS
- **Evaluate EPA Assessment Database (ADB)**
- **Explore collaboration with EPA Region IX**

# Next Steps

- **Full report of findings and recommendations, with performance metrics, within 2 months**
  - ◆ Subcommittee to review data structure and report back within 2 months
- **Panel to revisit progress on December 19-20, specifically looking for:**
  - ◆ A positive report from the Steering Committee
  - ◆ Examples of output reports
  - ◆ Demonstration of cradle-to-grave for example permits
  - ◆ A clear plan for correcting legacy data problem and substantive progress implementing this plan

# Summary

- **A permit management information system is mission critical for the Water Board**
  - ◆ There was a valid need to replace SWIM
  - ◆ A centralized permit management database requires user buy-in and support
  - ◆ CIWQS must integrate with other databases and functions, not necessarily replace them
  
- **CIWQS' underlying structure appears valid, but we need 2 months to be certain**
  
- **Program implementation was seriously flawed**
  
- **We have suggested substantial changes to the program and scheduled another review in 6 months**
  - ◆ Reduce the scope
  - ◆ Restructure management
  - ◆ Validate system requirements
  - ◆ Rebuild constituency
  - ◆ Address data issues
  - ◆ Produce key reports
  - ◆ Improve user interface